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09/587,813	06/06/2000	Martyn Lott	AP32618(065838.0195)	8496

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EXAMINER	
LEE, SIN J	

ART UNIT	PAPER NUMBER
1752	15

DATE MAILED: 02/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/587,813	LOTT ET AL.	
	Examiner	Art Unit	
	Sin J Lee	1752	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-28,30-37 and 40-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10,22-28,30-37,40,43,44 and 48-50* is/are allowed.

6)☒ Claim(s) *1-6,8,9,11-21,41,42 and 45-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Applicants canceled claims 29, 38, and 39.

2. In view of the amendment of December 20, 2002, the previous rejections on claims 17, 18, 20, and 21 over Nakao et al'942, the previous rejections on claims 17, 18, 20, and 21 over Yoshioka'108, the previous rejections on claims 17-19 and 21 over Takata et al'471 in view of Nakao et al'942, and the previous rejections on claims 17-19, and 21 over Takata et al'471 in view of Yoshioka'108 are hereby withdrawn since none of these cited prior arts teaches or suggests doing the heat treatment step at about 40°C or above *for at least 12 hours* as presently claimed in claims 17-21.

3. Claims 1-6, 8, 11, 13-19, 21, 41, 45, and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by McCullough et al (WO 99/21715) (with Dammel et al (5,510,420) cited here to show that typical novolak resins have glass transition temperature between 90-120°C).

McCullough teaches (pg.4, lines 9-17, pg.10, lines 11-19) a method of manufacturing a *printing form precursor* which comprises a coating on a substrate, the coating comprising a *positive* working composition which comprises a *phenolic resin (particularly novolak resin)*, wherein the method comprises the application of the composition in a solvent to the substrate, the drying of the composition, and the subsequent *heat treatment* of the coated substrate. McCullough furthermore teaches (pg.6, lines 25-27) that by carrying out a suitable heat treatment, the sensitivity of the composition may be rendered less variable over time.

McCullough also teaches (pg.7, lines 33-35, pg.8, lines 1-4) that they favor carrying out the heat treatment preferably for *at least 24 hours* and at a temperature of *at least 40°C and not excess of 90°C.* In Example 1, McCullough's heat treatment is carried out as follows; individual plate samples (which comprises dried coating formulations coated onto substrates) are first covered with interleaving (a *polythene* coated paper No.22) and then wrapped in paper (unbleached, unglazed Kraft 90 gm^{-2}, *coated with matt black low density polythene* 20 gm^{-2}), and placed in an Gallenkamp hotbox oven with fan at 50°C for 0, 2, 3, 5, and 12 days respectively. Applicants in their Example 1 also use *polythene* to wrap their precursors before placing them in an oven (for 3 days at 55°C). *Furthermore*, after present specification states (see pg.7) that the method of present invention offers improvement in the production of precursors, such that the products are consistent and stable or show good resistance to undesired developer attack in regions which have not been imaged, across a large area or both; *often over their entire coated surface*, it also states that the first embodiment of the invention is a method which includes a heat treatment step taking place under conditions which inhibit the removal of moisture from the precursor during the heat treatment and that one of two methods of achieving it is to wrap or encasing the precursor in a water-impermeable sheet material (the other method being carrying out the heat treatment in a non-drying environment). Therefore, it is the Examiner's position that the prior art's heat treatment illustrated in its Example 1 inherently teaches present limitation of heat treating the precursor "under conditions which inhibit the removal of moisture from substantially

the entire surface area of the imageable coating". Therefore, the prior art teaches present inventions of claims 1-5, 8, 11, 17, 19, and 45.

With respect to present claim 6, it is known in the art that typical novolak resins have glass transition temperatures between 90-120°C as evidenced by Dammel et al, col.1, lines 48-50. Therefore, when one carries out McCullough's heating treatment at 50°C as taught in his Example 1, it would inherently be the case that the glass transition temperature of the novolak resin (90-120°C) is not exceeded in the heat treatment as presently claimed in claim 6. Therefore, the prior art teaches the present invention of claim 6.

With respect to present claim 13, McCullough teaches (pg.6, lines 20-22) that his composition is preferably such that its solubility in a developer is not increased by incident UV radiation, and thus the prior art teaches present invention of claim 13.

With respect to present claim 14, McCullough teaches (pg.11, lines 12-34) that his composition is preferably patternwise solubilized by heat, during the pattern forming exposure process, by using direct heat or charged-particle radiation, for example electron beam radiation. Therefore, the prior art teaches present invention of claim 14.

With respect to present claim 15, McCullough teaches (pg.12, lines 15-29) that more preferably, his compositions can be exposed directly by means of a laser emitting radiation at above 600 nm and below 1400 nm and that in such compositions a suitable radiation absorbing compound such as carbon black or graphite can be used to convert the radiation to heat. Therefore, the prior art teaches present invention of claim 15.

McCullough teaches (pg.25, lines 7-16) a positive working lithographic printing form precursor having a coating comprising of a composition comprising an active polymer and a *reversible insolubilizer compound* coated on a support wherein the aqueous developer solubility of the composition is increased on heating and that the aqueous developer solubility of the composition is not increased by incident UV radiation, and thus the prior art teaches present invention of claim 16.

With respect to present claim 18, since McCullough teaches the present steps (a) and (b) of claim 18, it is the Examiner's position that the method taught by McCullough would inherently be capable of forming an electronic part precursor as present claimed in claim 18.

With respect to present claims 21 and 47, in his Example 1, after the heat treatment, McCullough imagewise exposes his heat-treated plates using the Creo Trendsetter at 7 watts and then develop the plates using a Horsell Mercury Mark V plate processor containing developer. Therefore, the prior art teaches present inventions of claims 21 and 47.

With respect to present claim 41, in Example 11, McCullough places the wrapped individual plate samples in a Gallenkamp hotbox oven with fan at *55°C* for 0, 1, 2 and 4 days. Therefore, the prior art teaches present invention of claim 41.

4. Claims 1-6, 8, 9, 11, 13-21, 41, and 45-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Yates et al (6,391,524 B2).

Yates teaches (see abstract and col.8, lines 9-13) a *heat-sensitive positive* working *lithographic printing plate precursor* or *electronic part precursor* having a coating on a

substrate. The coating composition contains a polymer having hydroxyl groups (such as *phenolic resins* and *novolac resins*) as well as an *infrared absorbing compound which absorbs the infrared radiation selected for imaging and converts it to heat* and one or more insolubilizer compound. See col.5, lines 35-65, col.6, lines 37-39, lines 57-62. After providing the coating on the substrate, Yates subjects the resultant precursor to a stabilizing heat treatment step by carrying out the heat treatment at a temperature of *at least 40°C* (*but not exceeding the glass transition temperature of the composition*) preferably *for at least 24 hours*. See col.8, lines 17-32. Yates states (col.8, lines 27-39) that such heat treatments are carried out on a stack of precursors or on a *precursor coil* and that preferably such a heat treatment takes place *under conditions which inhibit the removal of water from the precursor*, for example by wrapping the precursor (or a stack or coil thereof) in a *water impermeable material* and /or by using *humidity control*. In one of his Examples (see Example 4 and Comparative Example 4), Yates inserts polythene coated paper as interleaving between each precursor in the stacked precursors and then wrap the whole stack in *polythene*-coated paper (unbleached, unglazed Kraft paper 90 gm-2 coated with matt black low density polythene 20 gm-2) and sealing with adhesive tape (*SELLOTAPE*). The wrapped stack is then heat treated at *55°C for 72 hours* in a Gallenkamp environmental chamber. After that, the precursors are *imaged* with imagesetter, emitting at 830 nm and then *developed*. Therefore, the prior art teaches present inventions of claims 1-6, 8, 9, 11, 13-21, 41, 45, and 47. With respect to present limitation of heat treating the precursor "under conditions which inhibit the removal of moisture from substantially the entire surface area of the

imageable coating", applicants in their Example 1 also use *polythene* to wrap their precursors before placing them in an oven (for 3 days at 55°C). *Furthermore*, after present specification states (see pg.7) that the method of present invention offers improvement in the production of precursors, such that the products are consistent and stable or show good resistance to undesired developer attack in regions which have not been imaged, across a large area or both; *often over their entire coated surface*, it also states that the first embodiment of the invention is a method which includes a heat treatment step taking place under conditions which inhibit the removal of moisture from the precursor during the heat treatment and that one of two methods of achieving it is to wrap or encasing the precursor in a water-impermeable sheet material (the other method being carrying out the heat treatment in a non-drying environment). Therefore, it is the Examiner's position that the prior art's heat treatment illustrated in its Example 4 inherently teaches present limitation of heat treating the precursor "under conditions which inhibit the removal of moisture from substantially the entire surface area of the imageable coating".

With respect to present claim 46, since the *SELLOTAPE* used by Yates in his Example 4 is metalized polyester tape according to present specification (pg.38, line 1), the prior art teaches present invention of claim 46.

5. Claims 12 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yates et al (6,391,524 B2).

As explained above in Paragraph 4, Yates teaches that his heat treatments takes place under conditions which inhibit the removal of water from the precursor, for example by wrapping

the precursor in a water impermeable material and /or by using *humidity control*. Although the prior art does not explicitly disclose the relative humidity of at least about 25% (present claim 12) or about 35% (present claim 42), it is the Examiner's position that such humidity conditions as presently claimed would have been obvious to one of ordinary skill in the art because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Therefore, Yates's teaching would render obvious present inventions of claims 12 and 42.

6. Claims 10, 22-28, 30-37, 40, 43, 44, and 48-50 are allowed. Neither McCullough nor Yates discloses or suggests applying the heat treatment to a stack of at least 100 precursors as presently required in claim 10.

7. Applicants argue that McCullough does not disclose a method including a step of heat-treating under conditions which inhibit the removal of moisture from substantially the entire surface area of the imageable coating. However, as explained above, after present specification states (see pg.7) that the method of present invention offers improvement in the production of precursors, such that the products are consistent and stable or show good resistance to undesired developer attack in regions which have not been imaged, across a large area or both; *often over their entire coated surface*, it states that the first embodiment of the invention is a method which includes a heat treatment step taking place under conditions which inhibit the removal of moisture from the precursor during the heat treatment and that *one* of two methods of achieving it is to *wrap or encasing the precursor in a water-impermeable sheet material* (the other

alternative method being carrying out the heat treatment in a non-drying environment). Therefore, it is the Examiner's position that the prior art's heat treatment method as illustrated in its Example 1, which is the first method of those two methods as explained in present specification, would inherently heat-treat the precursor under conditions which inhibit the removal of moisture from substantially the entire surface area of the imageable coating as presently recited. *Besides*, applicants have not proved on the record that McCullough's heat-treatment step alone (without controlling humidity conditions at the same time) does not heat-treat the precursor under conditions which inhibit the removal of moisture from substantially the entire surface area of the imageable coating. Although applicants point to their Examples 1 and 2 of present specification in which precursors were heat-treated under controlled-humidity conditions, according to present specification, doing the heat treatment by controlling humidity conditions is just an alternative method to doing the heat treatment by wrapping or encasing the precursor in a water-impermeable sheet material. Also, the present claim language does not require doing the heat treatment under the controlled-humidity conditions.

For the reasons stated above, present rejections still stand.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is (703) 305-0504. The examiner can normally be reached on Monday-Friday from 8:30 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Janet Baxter, can be reached on (703) 308-2303. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9311 for after final responses or (703) 872-9310 for before final responses.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0661.

S. J. L.

S. Lee
January 24, 2003

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